



Building a Weather-Ready Nation

Extreme Cold and Wind Chill

Wind Chill:

Wind Chill is the term used to describe the rate of heat loss on the human body resulting from the combined effect of low temperature and wind. The Wind Chill is what it really feels like to a person when you combine the wind and the cold temperature. It is a “feels like” temperature.



NWS Windchill Chart



		Temperature (°F)																		
		Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
Wind (mph)	5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63	
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	
	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	
	45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93	
	50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95	
	55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97	
	60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98	

Frostbite Times

30 minutes

10 minutes

5 minutes

Wind Chill (°F) = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

Frostbite is an injury to the body caused by freezing body tissue. Fingers, toes, ears, and tip of the nose are most vulnerable. Symptoms include white or pale appearance. The area affected should be SLOWLY re-warmed. Immediate medical attention is needed

Hypothermia is abnormally low body temperature (below 95°F). Warning signs include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion. Immediate medical attention is needed. Slowly re-warm the body

Safety:

- Stay indoors during a winter storm or extreme cold
- Wear layers of loose-fitting, lightweight, and warm clothing.
- Cover all exposed skin during extreme cold conditions
- Keep dry, stay out of the wind, and change wet clothing
- Wear mittens, hats, and scarfs. Try to cover your face
- Have a blanket or an emergency kit in the car in case you get stranded

Wind Chill Advisory - Issued when the wind chill or feel like temperatures with the combination of the wind and cold air will be between -10° F to -24° F.

Wind Chill Warning - Issued when the wind chill or feel like temperature with the combination of the wind and cold air will be -25° F or colder.

Resources:

<http://www.nws.noaa.gov/os/windchill/index.shtml> | <http://www.ready.gov/winter-weather>